

## CLAIMS

1. A method for execution control acquisition of a program, comprising:  
executing a program;  
determining when a hardware performance counter reaches a threshold during the  
executing of the program;  
when the threshold is reached, switching execution control to a dynamic  
optimizer; and  
executing an optimized version of the program.
2. The method of claim 1, wherein the executing of the program includes  
executing original binary code for the program.
3. The method of claim 1, wherein the executing of the optimized version of  
the program includes executing an optimized binary code file for the program.
4. The method of claim 1, wherein the hardware performance counter is  
selected from the group consisting of an instruction counter and a cycle counter.
5. The method of claim 1, wherein the hardware performance counter is a  
cycles per instruction counter.
6. The method of claim 1, wherein the hardware performance counter is  
integrated into a central processing unit.

7. A method for executing an optimized version of a program, comprising:  
executing an optimized version of a program;  
receiving an interrupt during execution of the optimized version of the program  
and returning execution control to an operating system;  
executing an original version of the program;  
monitoring a hardware performance counter during the executing of the original  
version of the program;  
when the hardware performance counter reaches a threshold during the executing  
of the original version of the program, switching execution control to a dynamic  
optimizer; and  
continuing the executing of the optimized version of the program as directed by  
the dynamic optimizer.

8. The method of claim 7, wherein the executing of the optimized version of  
the program includes executing an optimized binary code file for the program.

9. The method of claim 7, wherein the executing of the original version of  
the program includes executing original binary code for the program.

10. The method of claim 7, wherein the hardware performance counter is  
selected from the group consisting of an instruction counter and a cycle counter.

11. The method of claim 7, wherein the hardware performance counter is a  
cycles per instruction counter.

12. The method of claim 7, wherein the threshold is set to a value that is indicative of unacceptable performance.

13. The method of claim 7, wherein the hardware performance counter is integrated into a central processing unit.

14. Computer readable media containing program instructions for execution control acquisition of a program, the computer readable media comprising:

program instructions for executing a program;

program instructions for determining when a hardware performance counter reaches a threshold during the executing of the program;

program instructions for switching execution control to a dynamic optimizer when the threshold is reached; and

program instructions for executing an optimized version of the program.

15. The computer readable media of claim 14, wherein the executing of the program includes executing original binary code for the program.

16. The computer readable media of claim 14, wherein the executing of the optimized version of the program includes executing an optimized binary code file for the program.

17. The computer readable media of claim 14, wherein the hardware performance counter is selected from the group consisting of an instruction counter, a cycle counter, and a cycles per instruction counter.

18. Computer readable media containing program instructions for executing an optimized version of a program, the computer readable media comprising:

program instructions for executing an optimized version of a program;

program instructions for receiving an interrupt during execution of the optimized version of the program and returning execution control to an operating system;

program instructions for executing an original version of the program;

program instructions for monitoring a hardware performance counter during the executing of the original version of the program;

program instructions for switching execution control to a dynamic optimizer when the hardware performance counter reaches a threshold during the executing of the original version of the program; and

program instructions for continuing the executing of the optimized version of the program as directed by the dynamic optimizer.

19. The computer readable media of claim 18, wherein the executing of the optimized version of the program includes executing an optimized binary code file for the program.

20. The computer readable media of claim 18, wherein the executing of the original version of the program includes executing original binary code for the program.

21. The computer readable media of claim 18, wherein the hardware performance counter is selected from the group consisting of an instruction counter, a cycle counter, and a cycles per instruction counter.

22. The computer readable media of claim 18, wherein the threshold is set to a value that is indicative of unacceptable performance.